

III. AMENDMENTS TO THE SPECIFICATION

On Page 2, Paragraph 1:

However, in the above-described constitution, a large amount of NO_x is contained in exhaust gas because the EGR control valve is closed during normal operation, and therefore it is necessary to increase the size of the NO_x adsorber, which makes a space area larger in the case of a large-sized engine, thus causing the constitutional disadvantage, and also causing the disadvantage of cost being high. In addition, when fuel is increased under a heavy load, there arises the fear that inner pressure of cylinders and exhaust gas temperature are increased and reliability and durability of the engine are impaired.

On Page 23, Paragraph 1:

FIG. 7 is a conceptual diagram of an exhaust deNO_x apparatus of a sixth embodiment. The same components as in the first embodiment are given the same numerals and symbols, the explanation thereof will be omitted, and only the parts different therefrom will be explained. ~~A~~ ~~An~~ fuel injection pump 34 of the engine 1 is provided with a fuel injection amount sensor 41 and an engine speed sensor 42, which are connected respectively to the controller 32 to constitute load detection means 40. Further, a fuel injection nozzle 35 is attached to the exhaust pipe 8, and the fuel injection pump 34 and the fuel injection nozzle 35 are connected to the controller 32 to constitute the fuel supply means ~~33~~, and the intake air throttle valve 21 and the EGR valve 24 are added to constitute exhaust gas recirculating amount control means 20d. When the air fuel ratio of the exhaust gas is to be made rich, the intake air throttle valve 21 is closed by a predetermined amount, and the EGR valve 24 is opened to perform exhaust gas recirculation. At the same time, as an adjustment amount for providing the air fuel ratio that makes it possible to release and reduce NO_x, the controller 32 outputs a control signal to increase an injection amount of the fuel injection pump 34 and inject fuel into the exhaust pipe 8 from the fuel injection nozzle 35. When the air fuel ratio is made rich by the above fuel supply means ~~33~~, fuel is supplied

to adjust an insufficient amount. As a result, the air fuel ratio can be surely controlled to be near the theoretical air fuel ratio.

On Page 25, Paragraph 2:

In step 208, the controller 32 calculates the degree of opening of the EGR valve 24 necessary to make the air fuel ratio of the exhaust gas rich, and outputs a control signal to the EGR valve 24 to adjust the degree of opening. In step 209, the controller 32 calculates the amount of air and the air fuel ratio. In step 210~~21~~, the O₂ sensor 31 detects the oxygen concentration, and outputs the detection value to the controller 32. In step 211, the controller 32 corrects the air fuel ratio. In step 212, the controller 32 calculates the injection rate of a reducer (fuel in this embodiment) and an injecting time T_{def} as an adjustment amount to provide the air fuel ratio for the exhaust gas necessary to reduce the total amount of NO_x.

On Page 26, Paragraph 1:

In step 213, a timer is started. In step 214, the controller 32 outputs a control signal to the fuel injection pump 34 and the fuel injection nozzle 35, and injects fuel based on the calculated value. In step 215, the engine performs combustion in the condition near the theoretical mixture ratio. In step 216, the controller 32 determines whether a fuel injection time T exceeds T_{def} or not, and in the case of NO, a command is given to the situation before step 213. In the case of YES in step 216, the controller 32 opens the intake air throttle valve 21 to make the air fuel ratio of the exhaust gas lean in step 217.